The Distributional Implications of Unemployment Insurance

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Purpose

This briefing summarises the main results of a behavioural micro-simulation analysis of the income redistributional impacts of unemployment insurance (UI) in Canada. This study is one of a series of component studies which collectively address twelve evaluation issues relating to UI program rationale, program impacts and effects, objectives achievement and alternatives. Specifically, this study examines the extent to which the UI Regular Benefits program serves as a vehicle for income distribution and redistribution at the individual and household levels.

Methodology and data

In a behavioural micro-simulation model, each individual in a representative panel is predicted to have a unique behavioural response to the incentives established by UI program design, conditional on their personal characteristics and labour market history. The aggregate impacts of UI are built up from the behavioural responses of individuals, within the constraint that all the micro-economic behaviours of individuals must add up to correct macro-economic aggregates. Since the outcomes of any given year change the labour market experience of each individual, and thereby change their future likelihood of employment and unemployment, the model traces out the labour market experience (earnings, unemployment, UI claimed, weeks not in the labour force, etc.) of each individual, and the influence of UI on that sequence of outcomes. From this data, we calculate standard measures of the inequality of outcomes — decile shares, Gini coefficient, coefficient of variation index, etc.

We present results using both the time horizon of one year and one national business cycle, in order to avoid the problem that spells of unemployment are unrealistically truncated in a one-year time period. The choice of a business cycle rather than a single year also avoids the problem that the distributional consequences of UI in any particular year may vary depending upon the state of the economy. This approach is sensible given that the financing of UI is intended to balance out over the course of a business cycle.

This model is constructed using micro-data from Statistics Canada's Labour Market Activities Survey (LMAS) and the Survey of Assets and Debts. LMAS data are used to estimate the determinants of the incidence and duration of unemployment, including the effects of last period's unemployment. Then, for each individual in the Survey of Asset and Debts, the probability of being unemployed and the duration of unemployment can be predicted, based on personal characteristics. Given simulated patterns of unemployment and UI receipt over the business cycle, calculations are made of the present value of income for each individual and of measures of inequality.

The final stage incorporates into the simulation an analysis of individual behavioural responses to the parameters of UI regular benefits. This is accomplished in two parts: a retrospective evaluation of past changes in the UI system and a prospective evaluation of future potential changes.

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The retrospective analysis compares the redistributional implications of the UI systems that were in place in 1971 and 1990, as compared to the base UI system existing in 1986, and the 1994 UI changes announced in the Federal budget for the 1981-1989 business cycle.

The prospective evaluation simulates the income distributional consequences of a set of possible changes to the Canadian UI program: (i) maximum benefit duration is 40 weeks rather than 50 weeks; (ii) the benefit/wage replacement ratio is 50 percent rather than 60 percent; (iii) the ceiling on maximum insurable earnings in 150 percent of average weekly earnings rather than the present 100 percent of average weekly earnings; (iv) the variable entrance requirement is increased by 5 weeks in each region; (v) the maximum benefit duration is reduced and the variable entrance requirement is increased simultaneously; and (vi) all of the above policy changes are implemented simultaneously. In each case, the redistributional consequences of the proposed change to UI is compared with the UI system as it existed in 1986/87 (the time period for which the model is estimated).

Finally, to further explore the policy implications of the distribution of income under alternative UI systems in the past or in the future, the study examines the characteristics of winners and losers in each quintile.

Key findings

1. Comparisons of the 1971, 1986, 1990 and 1994 UI systems over the 1981-1989 business cycle indicate that the introduction of more restrictive UI systems increases inequality in Canada. In particular, bottom quintiles appear to lose considerably more than the middle and upper quintiles when the UI system becomes less generous.

2. Labour market averages (e.g., annual weeks of unemployment) are not noticeably affected by any of the policy changes simulated.

3. Income inequality increases if the minimum weeks required to qualify for UI are increased by 5 weeks in each UI region. While we estimate that only a relatively small number of UI claimants would be affected by such a policy change (fewer than 13 percent of UI claimants in the SPSD database had 19 or fewer weeks of employment before establishing their claim) and others would modify behaviour to retain eligibility, we nonetheless observe increases in aggregate income inequality because disentitlement from all UI benefits leads to very large income losses for those affected.

   Specifically, an across-the-board increase of 5 weeks in the minimum qualifying weeks would increase income inequality among Canadian men and among households. The Gini index for men would increase from 0.448 to 0.459 using before-tax income, while the Gini index for households would increase from 0.474 to 0.481. While the shares of the top decile and the top quintile increase, the share of the bottom decile decreases for men, women and households. This result implies that such a policy change generates a larger increase in income inequality because those who are affected can suffer very large income losses if they lose all UI benefits.

4. Income inequality increases if the benefit/wage replacement rate is reduced from 60 to 50 percent, though the magnitude of this change is smaller than that generated by increasing minimum weeks to qualify for UI. Reducing the benefit/wage replacement rate affects all UI claimants. All claimants continue to receive their benefits, but at a somewhat lower rate. In this case, many people are affected but the

change for any one individual is not so large as from the disentitlement effects discussed above. The Gini rises from 0.448 to 0.451 for men, and from 0.474 to 0.476 for households. Again the share of the top decile and the top quintile slight increase while the bottom quintile slightly decreases for these groups.

5. Increasing the insurable earnings ceiling to 150 percent of average weekly earnings reduces income inequality. Higher-income individuals are less likely than average to become unemployed and claim UI. Thus, increased premium payments by relatively higher-income individuals more than offset the increased UI benefits paid to higher-income individuals.

6. Reducing maximum benefit weeks from 50 to 40 does not generate noticeable impacts on income inequality among Canadian men, women and households. Using before tax incomes, the Gini index displays a very small change from 0.448 to 0.447 for men, from 0,628 to 0.627 for women, and from 0.474 to 0.473 for households. At the same time, the shares of the top decile and the top quintile indicate a slight decline while the share of the bottom quintile shows a slight increase for men, women, and households when compared to the 1986 UI system. The reason for this result is that only a relatively small fraction of the unemployed and, therefore, only a very small fraction of the total population is affected by this policy change.

To understand the policy implications of these results, it is necessary to know what magnitude of change in a Gini coefficient is "big enough" to be concerned about. Our review of international comparative data shows that even seemingly small numeric changes in aggregate inequality measures can indicate important changes in inequality. As a rough rule of thumb, changes at the second decimal level (for example, the increase of 0.011 in the Gini for men as a result of increasing weeks required to qualify for UI) are important. Changes at the third decimal level are not statistically large enough to warrant much attention.

Biographical notes

Lars Osberg is a Professor of Economics at Dalhousie University and a Director of the Canadian Employment Research Forum. He is an acknowledged authority in labour economics, macroeconomics, applied econometrics, as well as economic and social policy. He has published extensively on unemployment, UI, labour mobility, earnings and wealth distribution, measurement of economic well-being, among other subjects. His books on economic inequality make him one of the best known experts on issues related to income distribution and redistribution.

Shelley Phipps is an Associate Professor of Economics at Dalhousie University. Her primary research interests focus on labour economics, applied econometrics and public finance. She has published notable research on the subjects of UI reform and poverty in Canada.

Sadettin Erksoy is a recent Ph.D. graduate from Dalhousie University who developed the UI behavioural micro-simulation model used in this project. He is currently a Lecturer in Economics and a Research Associate at Dalhousie University.

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Copies of the full technical report (when finalised) and further copies of this summary are available from:

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